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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,967

11/14/2003

Richard A. Proulx

086333.00003

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01/22/2007

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EXAMINER

EWALD, MARIA VERONICA

ART UNIT

PAPER NUMBER

1722

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/22/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/713,967	PROULX ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Maria Veronica D. Ewald	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 and 38-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-27, 43 and 44 is/are allowed.
- 6) ☒ Claim(s) 28 and 38-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

13. The disclosure is objected to because of the following informalities: An amendment to the specification was submitted on April 25, 2006 which updates the first paragraph to state: "This is a continuation-in-part of United States patent application Serial No. 09/943,248, filed August 29, 2001, and entitled "Noise Attenuating Flexible Cutting Line for Use in Rotary Vegetation Trimmers and Method of Manufacture," now U.S. Letters Patent No. 6,910,227, issued June 28, 2005. The patent number listed is incorrect and should be corrected to state "U.S. Letters Patent No. **6,910,277.**"

### *Allowable Subject Matter*

14. Claims 1 – 27 are allowed. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach an assembly for use in continuously forming a plurality of lengths of flexible noise attenuating cutting line where the assembly is comprised of a breaker plate disposed in a lower portion of said chamber, said plate defining an upwardly projecting conical inner portion and a substantially planar outer portion, said inner portion directing molten monofilament from said channel downwardly and outwardly. The closest prior art reference of Machuque (U.S. 4,217,083) teaches a breaker plate; however, *the plate does not define an upwardly projecting conical inner portion, said inner portion directing molten monofilament from said channel downwardly and outwardly onto said outer portion.*

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Claims 43 – 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since prior art fails to teach an assembly for use in continuously forming a plurality of lengths of flexible noise attenuating cutting line where the assembly is comprised of a breaker plate which is of a conical configuration projecting upwardly from said outer portion.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fogle (U.S. 6,051,172), identified herein as Fogle 172, in view of Cockings (U.S. 5,492,706) and further in view of Fogle (U.S. 6,434,837), identified herein as Fogle 837. Fogle 172 teaches an assembly comprising: a housing (item 100 – figure 11); a plurality of extrusion dies disposed in said housing (column 9, lines 47 – 50), each of said dies defining a die hole configuration in the lower end thereof for the extrusion of one or more strands of molten monofilament therethrough (figure 11; column 9, lines 47 – 50); a fluid flow pathway disposed within said housing adapted for fluid communication with a source of molten monofilament for directing molten monofilament onto said dies (column 9, lines 49 – 50); and a cooling quench bath disposed below said dies (item

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112 – figure 11); a guide assembly mounted in said quench bath for receiving said one or more strands of monofilament from said dies and directing said strands through said bath (figure 11; column 9, lines 52 – 55); and a plurality of drive rollers for pulling said strands through said bath (figure 11; column 9, lines 52 – 60).

Fogle 172, however, does not teach that the monofilament is twisted nor teaches the presence of a rotating die to impart such a twisted configuration to the monofilament.

In a method to produce twisted filaments, Cockings et al teach twisting filaments by synchronously rotating a die about a central longitudinal axis during extrusion and having a drive cylinder, motor, gears and engagement surface (figures 1 and 3), the holes being of equal diameter spaced apart a distance less than the diameter (figure 4) for the purpose of forming a twisted extrusion product.

Furthermore, Fogle 837 teaches a trimmer with monofilament line that has a twisted configuration (figure 4). Fogle 837 further states that a twisted trimmer line is advantageous in that its twisted configuration results in lower noise level as the cutter or trimmer is being operated (abstract; column 10, lines 65 – 67).

Thus, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Fogle 172, with the rotating die of Cockings to produce an extruded filament product of twisted configuration for the purpose of having a monofilament line that results in lower noise level as the cutting or trimmer is being operated as taught by Fogle 837.

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Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proulx (U.S. 5,814,176), in view of Cockings (U.S. 5,492,706) and further in view of Fogle (U.S. 6,434,837). Proulx teaches an assembly comprising: a housing (item 28 – figure 1); a plurality of extrusion dies disposed in said housing (column 4, lines 15 – 20), each of said dies defining a die hole configuration in the lower end thereof for the extrusion of one or more strands of molten monofilament therethrough (figure 1; column 3, lines 44 – 45); a fluid flow pathway disposed within said housing adapted for fluid communication with a source of molten monofilament for directing molten monofilament onto said dies (figure 1); and a cooling quench bath disposed below said dies (column 4, lines 20 – 35); a guide assembly mounted in said quench bath for receiving said one or more strands of monofilament from said dies and directing said strands through said bath (figure 1; column 4, lines 20 – 35); and a plurality of drive rollers for pulling said strands through said bath (figure 1).

Proulx, however, does not teach that the monofilament is twisted nor teaches the presence of a rotating die to impart such a twisted configuration to the monofilament.

In a method to produce twisted filaments, Cockings et al teach twisting filaments by synchronously rotating a die about a central longitudinal axis during extrusion and having a drive cylinder, motor, gears and engagement surface (figures 1 and 3), the holes being of equal diameter spaced apart a distance less than the diameter (figure 4) for the purpose of forming a twisted extrusion product.

Furthermore, Fogle teaches a trimmer with monofilament line that has a twisted configuration (figure 4). Fogle further states that a twisted trimmer line is advantageous

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in that its twisted configuration results in a lower noise level as the cutter or trimmer is being operated (abstract; column 10, lines 65 – 67).

Thus, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Proulx, with the rotating die of Cockings to produce an extruded filament product of twisted configuration for the purpose of having a monofilament line that results in a lower noise level as the cutting or trimmer is being operated as taught by Fogle.

With respect to the claim language "...pulling said strands through said bath so as to effect sufficient crystallization of said strands such that upon said strands being pulled from said bath, heated and stretched, said strands will retain a twisted configuration," Examiner does not give weight to the process being performed, since no further structural feature is being identified beyond the quench bath and no further structural feature is identified for conducting the heating and/or stretching of the monofilament.

Claims 38 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proulx or Fogle 172 in view of Cockings, in view of Fogle 837, and further in view of Machuque (U.S. 4,217,083).

Proulx and Fogle 172 teach the apparatus characteristics previously described above. Furthermore, Cockings teaches the rotating die as described above. In addition, Cockings teaches twisting filaments by synchronously rotating a die about a central longitudinal axis during extrusion and having a drive cylinder, motor, gears and

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engagement surface (figures 1 and 3), the holes being of equal diameter spaced apart a distance less than the diameter (figure 4) for the purpose of forming a twisted extrusion product.

Fogle 837 teaches the advantages posed by twisting monofilament to thereby produce a cutting line that results in decreased noise level during operation.

However, none of the above references teaches the explicit presence of a breaker plate upstream of the extrusion dies; however, the presence of breaker plates in an extrusion channel is known. A breaker plate is typically installed to equalize and diffuse the flow of molten thermoplastic and to also filter out any impurities. For example, in a method to extrude product, Machuque teaches a breaker plate (item 16 – figure 1) upstream of the extrusion holes and having an inclined inner portion and a planer outer portion, the inner portion directing molten material from the channel onto the outer portion for the purpose of diffusing the material (column 4, lines 1 – 10).

Thus, it would have been obvious to one of ordinary skill in the art to modify the apparatus of either Fogle 172 or Proulx with the rotating die of Cockings and the breaker plate of Machuque to produce a twisted monofilament line as taught by Fogle 837 for the purpose of having a monofilament line that results in lower noise level as the cutting or trimmer is being operated as taught by Fogle 837.

### ***Response to Arguments***

16. Applicant's arguments, see pages 16 – 18, filed October 30, 2006, with respect to the rejection of claims 1 – 28 have been fully considered and are persuasive. The



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rejection of claims 1 – 27 has thus been withdrawn. In light of the amendment of claims 1 and 20, respectively, Examiner agrees that the reference of Machuque does not teach a breaker plate with an upwardly projecting conical inner portion, such that the inner portion directs molten monofilament from the channel downwardly and outwardly. Therefore, as indicated, claims 1 – 27 are deemed allowable.

Applicant's arguments with respect to claim 28 have been considered but are moot in view of the new ground(s) of rejection. Thus, in light of the amendment of claim 28, Examiner has cited the references of Proulx and Fogle.

Furthermore, with regards to the newly-added claims 38 – 44, Examiner has rejected claims 38 – 42 over the reference of Proulx, Fogle, Cockings and Machuque; however, claims 43 – 44 are indicated as allowable, but being objected to as they depend on the rejected independent claim 38. Claim 43, similar to newly-amended claims 1 and 20 further define the breaker plate as having a upwardly-projecting inner portion.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a


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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE



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